

To: T.MASSEY (EPA9374)  
From: T.MASSEY (EPA9374) Delivered: Mon 22-June-87 16:56 EDT Sys 163  
Subject: ATTN: Garrett Arai -- Draft Action Memo Jims Liquid Waste Site  
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Funding Request for Removal Action at Jim's Liquid  
Waste Site, Culpeper, Virginia

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## I. PURPOSE

This is a request for funding to initiate a removal action at the Jim's Liquid Waste Site, Culpeper County, Virginia. This site contains materials actively leaking from deteriorating buried drums. An estimated 500 buried drums are located at the site and the substances leaking from these drums pose a significant risk of harm to human health and welfare and the environment. The requested funding in the amount of \$906,772 will be used to remove and dispose of the buried drums and any contaminated soil.

## II. BACKGROUND

The Jim's Liquid Waste Site is located approximately three miles west of Culpeper, Culpeper County, Virginia. A residence is located on the site and approximately 23 people live within a quarter-mile radius.

According to a Virginia Department of Hazardous Waste Management (VDHWM) preliminary assessment, the site was used from 1974 to 1982 for the disposal of waste solvents, septic wastes, and restaurant grease. Disposal methods included the burial of drums containing wastes, dumping of liquids and sludges into lagoons and trenches, and incineration of solvents. Wastes accepted at the facility are reported to include organic solvents, epoxy resins, paints, thinners, phenols, coal tars, vinyl ester amine epoxy, asbestos, and chromium wastes.

In 1979, the Virginia Department of Health directed the facility to discontinue acceptance of industrial waste. In 1981, the owner of the facility was advised to remove the numerous drums present both on the surface and buried at various locations.

In October 1986, VDWM received a report from an anonymous former employee that buried drums remained on the site. VDWM requested assistance from EPA Region III to conduct further assessment activities in February 1987.

In February and March 1987, a joint preliminary assessment was conducted by EPA/ERS, VDWM, and TAT. Surface drums containing grayish residues, which contained organic solvents, were sampled; an inventory of all surface drums was made; the Myers' residential well was sampled; and a magnetometer survey was conducted over areas reported to contain buried drums. The magnetometer survey indicated that buried metal was present in several areas on the property and the distribution and magnetic "signature" of the buried metal was consistent with that encountered over buried drums. The magnetometer survey indicated that approximately 250 to 400 drums were buried at two locations on the site ranging in depth from two to five feet.

In April 1987, TAT sampled two on-site monitoring wells. The sample analysis indicated that both monitoring wells contained organic semi-volatile chemicals, as shown in Table I as follows on the following page.

In June 1987, TAT performed a soil gas survey at the site in the area targeted by the magnetometer data. Field reconnaissance and the soil gas sampling identified drums exposed at the surface and buried at depths of 0 to 3 feet. The drums found partially buried are in poor condition and organic vapors are detected in concentrations of up to 400 ppm in the soils at the drum burial areas which indicates that the buried drums are leaking. Field screening with ragor tubes indicates that the drums contain xylene and toluene. This is supported by the contaminated shallow groundwater found in the monitoring wells at the site.

## I. THREAT

Jim's Liquid Waste site meets the criteria for a removal action under the National Contingency Plan in that there is a potential threat to public health, welfare and/or the environment based upon Section 300.65 factors (i) and (j) of subpart (b)(2) as follows:

(i) Actual or potential exposure to hazardous substances by nearby populations, animals or food chain.

(iv) High levels of hazardous substances largely at or near the surface that may migrate.



TABLE I

WELL #	CHEMICAL	CONCENTRATION LEVEL (ug/L)
Monitoring well #1	oxirane 2,3-dimethyl	54
	1,2-hexanol, 2-methyl	330
	1-octanol	48
	hexanoic acid, 2-ethyl	16
	1,5-pentamethyl, 3-methyl	15
	3-undecene, 7-methyl(2)	17
	1-decanol	32
	benzoic acid	1.8
	dodecanoic acid	14
	ethanol, 2-butoxy phosphate	44
Monitoring well #2	1-hexanol, 2-ethyl	18
	ethanol, 2-butoxy phosphate	9.1
	total BNA	45
near residential well	ND	
m sample #3		(mg/kg)
	xylene	.6
	lead	535
	methanol	1.4
	ethanol	2.9
	2-propanol	1.5
	1-propanol	.5
	methyl ethyl ketone	1.0
	butane	1.7
	methyl isobutyl ketone	.2
	toluene	.1

All the private homes in the area surrounding the site rely on wells. The groundwater within the Culpeper Basin occurs in two distinct, but connected, zones. The upper zone is comprised of soil and weathered bedrock and acts as a low-permeability "sponge" for the lower bedrock zone. Groundwater in the bedrock typically occurs within the joints and fractures created by weathering and structural deformation. The mobility of contaminants in a fractured rock aquifer system can be very high. A concentrated source of contaminants within the upper aquifer could potentially ruin both aquifers. This could potentially affect approximately 2,177 persons who live within a three-mile radius of the site.

In addition to the groundwater threat, high levels of hazardous materials are located very near the ground surface. The buried drums are located in a hay field and farm equipment is being used in the area. The stress of farm machinery being driven over these drums could result in a very volatile situation, or at least rupture the drums and release the contents into the environment.

The presence of drums containing waste solvents at or near to the surface represent a significant fire and explosion threat.

On June 19, 1987, the Virginia State Department of Health informed Mr. Myers that a significant threat was present at the site. The State advised Mr. Myers not to use his well water for consumption and that he should seek an alternative drinking water supply.

#### PROPOSED ACTIONS AND COSTS

The proposed project includes the excavation and staging of an estimated 100 drums along with the associated contaminated soils. The staged materials will be sampled to characterize the waste types present. Additional surveys will be made of the remainder of the Myers property to ensure that no buried drums remain on the site. Disposal options will be evaluated to identify the most-effective, environmentally sound, disposal method.

#### Estimated Costs

RCS	\$236,028
PA	29,750
AT	76,850
ADDITIONAL COSTS (transportation, disposal, analytical)	445,000
BTOTAL	\$787,628
4 EPA HQ (Contingency)	118,144
AL ESTIMATED PROJECT COSTS	\$905,772

7. REGIONAL RECOMMENDATION

Because conditions at Jim's Liquid Waste site meet the criteria for a removal action under Section 300.65 of the National Contingency Plan, I recommend your approval of this removal funding request. The estimated costs of this project are \$905,772, of which \$871,559 are for extramural contractor costs.

You may indicate your approval or disapproval by signing below.

APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_

DISAPPROVAL \_\_\_\_\_ DATE \_\_\_\_\_